

CENTRAL REGIONAL LABORATORY

Data Checklist

Data Set AIR 2002 0008 Cheshire Monitoring
Suspense Particles

☒ Chain-of-Custody

☒ Analysis Request Form(s)*

☐ Sample Tags

☒ Transmittal Report w/signatures of the following:

- Analyst (s)
- Data Management Coordinator

* Analysis Request Forms provide the data user a means to connect sample numbers with sampling locations

Prepared by: Sylvia Pruffa 10-29-01
Data Management Coordinator

Rev. 5/4/00



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: OCT 29 2001

Subject: Review of Region 5 Data for CHESHIRE MONITORING STUDY

From: Francis A. Awanya, Chemist *FAA*
Region 5 Central Regional Laboratory

To:

Attached are the results for: CHESHIRE MONITORING STUDY

CRL data set number: 20020008

Samples analyzed for: **Suspended Particles**

Results are reported for sample designations: 2002AH14S01, 2002AH14D01, 2002AH14S02,
and 2002AH14S03.

OCT /2 9 2001

Data Management Coordinator and Date Received

Date Transmitted: OCT 29 2001

Please have the U.S. EPA Project Manager/Officer complete the Customer Satisfaction Survey, attached, or call the CRL Sample Coordinator at 3-1226.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
ML-10C

_____/ /
Received by and Date

Comments:

ENVIRONMENTAL PROTECTION AGENCY
REGION V
CENTRAL REGIONAL LABORATORY
FINAL RESULT REPORT FOR THE TEAM: ANALYTICAL AND INORGANIC (A&I)

DIVISION/BRANCH: AIR DIVISION SAMPLING DATE: 10/10/2001 LAB ARRIVAL DATE: 10/19/2001 DUE DATE: 10/26/2001
DU NUMBER: 90101A DATA SET NUMBER: 20020008 STUDY: CHESHIRE MONITORING STUDY PRIORITY: 1 LABORATORY :CRL

SAMPLE #	CRL LOG NUMBER	SAMPLE DESCRIPTION	SUSPENDED PARTICLE (g/filter)			
1	2002AH14D01	GUIDING HANDS SCHOOL	0.0255			
2	2002AH14S01	GUIDING HANDS SCHOOL	0.0261			
3	2002AH14S02	RVHS	0.0176			
4	2002AH14S03	ADDAVILLE	0.0210			
DATE OF ANALYSIS			10/23-26/2001			
ANALYST			<i>FWA</i>			

Reviewed by: *ES* Date: 10/26/2001

CRL SOP: HK015	Date: 07 January 2000	Revision No: 1
Data review for the Analytical and Inorganic Group		Page 1 of 1

ATTACHMENT II

CRL Analytical and Inorganics Data Review Checklist

Batch Number: 20020008 Facility: CHESHIRE MONITORING STUDY
 Parameter: SUSPENDED SOLIDS CRL.SOP: AIG047

Package Overview:	YES	NO
Raw Data Package Complete?	✓	
Results Reported Correctly?	✓	
Special Requests Done?	N/A	
Calculations Checked?	✓	
Calibration Not Exceeded?	N/A	
Manual Peak Integration performed? Circle one IC or GC and Check	N/A	
Field QC Checked?	N/A	
Quality Control:		
Holding Times Met?	N/A	
Preservation Checked?	N/A	
Proper Digestion Verified?	N/A	
Initial Instrument Performance Checks Verified?	✓	
Calibration Verification Checked?	N/A	
Sample-Specific QC (Internal Standards or Analytical Spikes) Okay?	N/A	
Matrix QC Checked?	N/A	
Digestion Blanks Checked?	N/A	
Spiked Blank Checked?	N/A	
LCS (if applicable) Checked?	N/A	
QCS (if applicable) Checked?	N/A	
Final Check		
Technical Review Done?	✓	
Narrative Complete?	✓	

Analyst: FAA Peer Reviewer: EJ

Date: 10/26/2001 Date: 10/26/2001

Comments Attached? (Y/N) N

Data Set Number:	<u>20020008</u>	Parameter:	<u>Suspended Particles</u>
Facility Name:	<u>CHESHIRE MONITORING STUDY</u>		
Study Name:	<u>CHESHIRE MONITORING STUDY</u>		
Date of Narrative:	<u>10/26/2001</u>	Analyst:	<u>FAA</u>
		Signature:	<u>FAA</u>

ANALYSIS CASE NARRATIVE

Four (4) exposed filters were received for suspended particle analysis at the Central Regional Laboratory (CRL) on October 19, 2001. Those filters were fractions of clean filters, prepared at the CRL and sent to the field for exposure. Filter identification numbers and other pertinent information obtained from the individual filters and packaging envelopes are presented in the table below.

Filters ID	Samples ID	Tag Number
Q6280054	2002AH14D01	5-340079-2
Q6280053	2002AH14S01	5-340078-2
Q6280055	2002AH14S02	5-340080-2
Q6280056	2002AH14S03	5-340081-2

Filter preparations and final weighting of exposed filters were performed according to CRL.SOP AIG047. Analysis of exposed filters began on 10/23/2001 and were completed on 10/26/2001.

QUALITY CONTROL (QC):

Analysis results were evaluated using the QC requirements of CRL.SOP AIG047. All the required quality control criteria for the laboratory, method, and system performance audits were evaluated and determined to be within the limits.

SAMPLE RESULTS: All the sample results are acceptable for use.

ELECTRONIC DATA:

No electronic data are available.

CHESHIRE AIR MONITORING PROJECT

PM10

Parameter: Suspended Particles

Data Set Numbers: 20020008

Date of Analysis 10/23-26/2001

Analyst: FAA

BALANCE VERIFICATION:

Standard Weights	Balanced weight	Differences
Actual (g)	Balanced (g)	(g)
Limit +/-0.0005 g		
Data set Number 20020008		
1.0000	1.0000	0.0000
2.0000	2.0000	0.0000
5.0000	5.0000	0.0000

QC-SUMMARY FOR EXPOSED FILTERS

Filter ID	CRL Sample	Analysis	ANALYST	Exposed
Number	I.D Number	Date		weight (g)
Data set Number 20020008				
Q6280054	2002AH14D01	10/26/01	Analyst 1	4.3919
Q6280054	2002AH14D01	10/26/01	Analyst 2	4.3914
Differences (Limit +/- 5 mg).....				0.0005

CHESHIRE AIR MONITORING PROJECT
PM10

Filter ID	CRL Sample	Sampling	Station	Sampler	Pstg	P1/Pa	Total	Pre Weight	Exposed	Weight	PM10
Number	I.D Number	Date	Location	SN	Avg		Volume (M^3)	of filters (g)	weight (g)	Gain	(UG/M^3)
Data set Number 20020008											
Q6280054	2002AH14D01	10/10/01	Guiding Hands School	3013	20.15		0.00	4.3664	4.3919	0.0255	ERR
Q6280053	2002AH14S01	10/10/01	Guiding Hands School	3012	19.55		0.00	4.3510	4.3771	0.0261	ERR
G6280055	2002AH14S02	10/10/01	RVHS	3009	19.90		0.00	4.3613	4.3789	0.0176	ERR
Q6280056	2002AH14S03	10/10/01	ADDAVILLE	3011	19.15		0.00	4.3396	4.3606	0.0210	ERR

General information

Standard weights, actual (g)

Balanced weights, balanced (g)

SARTORIUS

1.0000

1.0000

S/N 37010119

2.0000

1.9999

10/10/01 FAA

5.0000

5.0000

Mettler Toledo

0.5000

0.5000

S/N 1120181846

1.000

1.0001

10/11/01 AD.

2.000

2.0000

Mettler Toledo

2.00

1.9999

16/18/01 AD.

5.00

5.0000

S/N 1120181846

6.00

6.0000

7.00

7.0001

SARTORIUS

S/N 37010119

1.0000

1.0000

10/18/01 FAA

2.0000

1.9999

5.0000

5.0000

METTLER

AG 285 (500+200+200)
+100mg

1.0000

1.0000

10/23/01 FAA

2.0000

1.9999

S/N 1120181839

5.0000

5.0001

METTLER

AG 28550

1.0000 (500+200+200+100mg)

1.0000

2.0000

2.0000

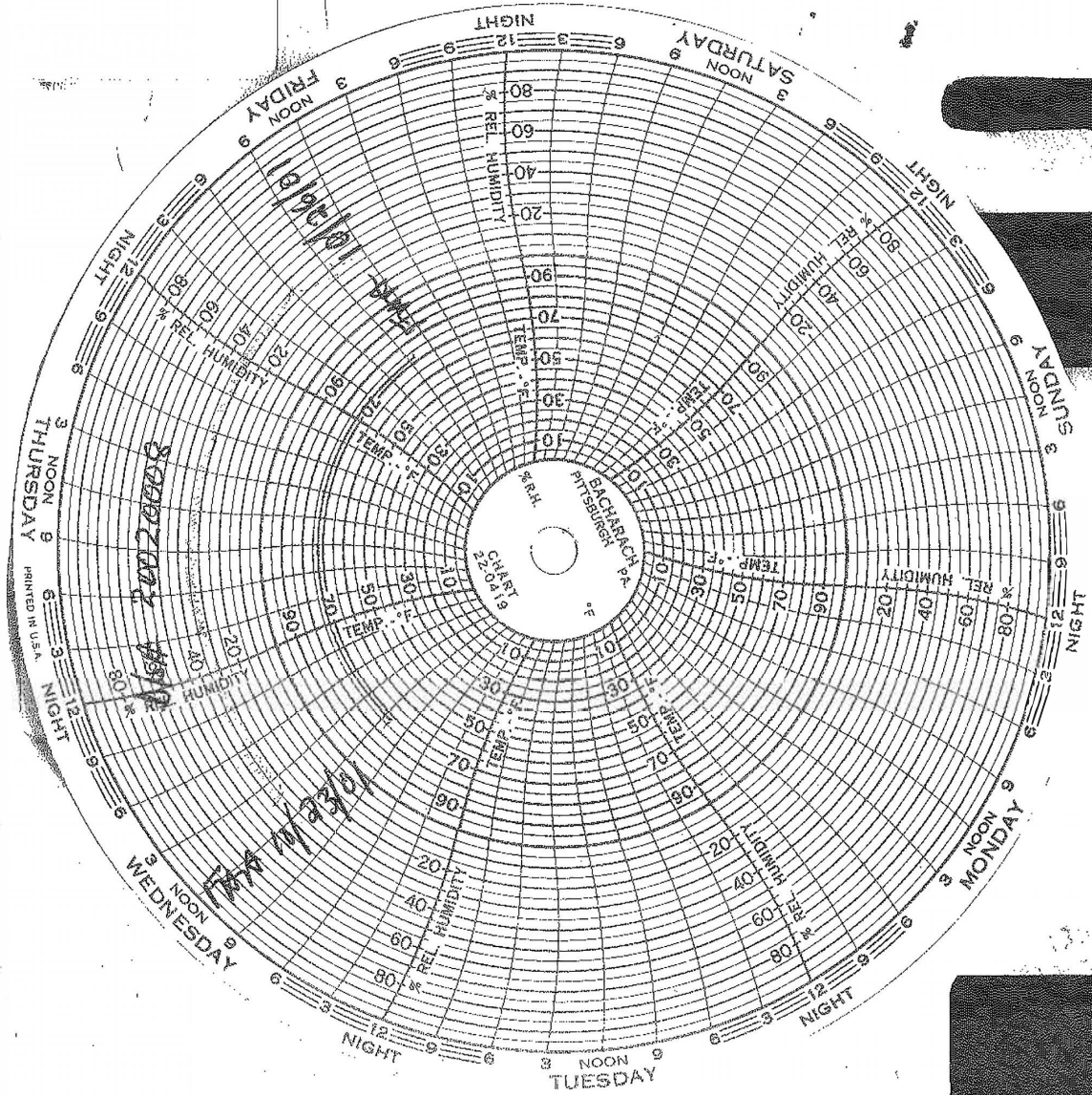
10/26/01 FAA

5.0000

5.0000

S/N 1120181839

Incident	Filters ID	Tare wt (g)	Deep. wt (g)	Exposed wt (g)	Exposed Deep wt (g)	Comments
	Q6280058	4.3739	4.4361	4.4301	4.4180 ^{10/23/01}	4.4128
and one side	Q6280057	4.3783	4.4400	4.4301	4.4232 ^{10/23/01}	4.4211 ^{ES}
854	Q6280056	4.3396	1	4.3606 ^{10/23/01}		4.4209
957	Q6280055	4.3613		4.3789		
mouth	Q6280054	4.3664		4.3919	4.3914 ^{ES}	
mouth	Q6280053	4.3510		4.3771		
mouth	Q6280052	4.3396				
hole	Q6280051	4.3707	4.3709 ^{ES}			
at the	Q6280050	4.3779				
in filter	Q6280048	4.3727				
2 tear on	Q6280047	4.3918	4.3915 ^{ES}			
side	Q6280046	4.3672				
of ml	Q6280045	4.3746				
at cut	Q6280043	4.3984				
at fold	Q6280042	4.3560				
roll	Q6280041	4.3753				
and punch	Q6280040	4.3934				
side	Q6280039	4.3713				
(tear and	Q6280038	4.3721				
whole	Q6280037	4.3934				
ge tears	Q6280036	4.3718	4.3712 ^{ES}			
of one side	Q6280035	4.3789				
2 tear in	Q6280034	4.3436				
ter / scratch	Q6280033	4.3729				
hole size						



COMMENTS:

ID _____

ACTUAL _____

 $\mu\text{g}/\text{m}^3$

FLOW _____

TOTAL FLOW _____

 m^3

SAMPLE WT _____

g

APSED TIME 1440 _____

PRESS _____

mmHg

INITIAL WT _____

g

/G. RECORDER RESP. 20.15 _____

TEMP _____

 $^{\circ}\text{C}$

K

FINAL WT _____

g

P _____

SITE Grounding Hands school, # 5013 Dwp, Q6280054

M-10 _____

OPERATOR OEPH

DATE 10-10-02

AIRS

US EPA Region 5 Field Sample



5-340079-2

Parameters PM10

2002002

Preservative None S M MD B D

Sample ID 02AH14DO1 X

Sampler Mike Murph

Date 10-10-02

COMMENTS:

STD _____ ACTUAL _____
 FLOW m^3/min _____
 ELAPSED TIME 1440 MINUTES _____
 PRESS $mmHg$ _____
 TEMP $^{\circ}C$ _____
 K _____
 FINAL WT _____
 INITIAL WT _____
 TOTAL FLOW m^3 _____
 SAMPLE WT ug/m^3 _____
 DATE $10-10-02$ OPERATOR $OJPA$ SITE $Goading Honda School #3012 Q6280053$
 AIRS $PM-10$

US EPA Region 5 Field Sample



5-340078-2

Parameters PM10

20020008

Preservative None

S M M D B D

Sample ID 02AH14S01

X

Sampler Mike Murp8

Date 10-10-02

COMMENTS:

STD

ACTUAL

PM-10

$\mu\text{g}/\text{m}^3$

FLOW

m^3/min

TOTAL FLOW

m^3

SAMPLE WT

g

ELAPSED TIME

MINUTES

PRESS

mmHg

INITIAL WT

g

AVG. RECORDER RESP.

TEMP

$^{\circ}\text{C}$

K

FINAL WT

g

TSP

SITE RVHS # 3009, Q6250055

PM-10

OPERATOR

CEPA

DATE

10-10-02

AIRS

US EPA Region 5 Field Sample



5-340080-2

Parameters PM10

2002008

Preservative None S M M D B D

Sample ID 02AH14S02 X

Sampler Mike Murphy

Date 10-10-02

COMMENTS:

STD _____ ACTUAL _____
 FLOW _____ m^3/min _____
 ELAPSED TIME 1440 MINUTES _____
 AVG. RECORDER RESP. 19.15 TEMP $^{\circ}C$ _____
 TSP _____
 PM-10 _____
 AIRS _____
 OPERATOR CEPP DATE 10-10-02
 SITE Addenville, #3011 / Q6280056
 INITIAL WT _____ mmHg _____
 FINAL WT _____ K _____
 TOTAL FLOW _____ m^3 _____
 SAMPLE WT _____ ug/m^3 _____
 PM-10 _____

US EPA Region 5 Field Sample



5-340081-2

Parameters PM10

20020008

Preservative None

S M MD B D

Sample ID 02AH14SO3

X

Sampler Mike MurphyDate 10-10-02

CENTRAL REGIONAL LABORATORY

Data Checklist

Data Set AIR 20020008 Cheshire Monitoring
Metals

- ☒ Chain-of-Custody
- ☒ Analysis Request Form(s)*
- ☐ Sample Tags
- ☒ Transmittal Report w/signatures of the following:
 - Analyst (s)
 - Data Management Coordinator

* Analysis Request Forms provide the data user a means to connect sample numbers with sampling locations

Prepared by: Sylvia Griffin 10-31-01
Data Management Coordinator



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date:

OCT 31 2001

Subject: Review of Region 5 Data for **Cheshire Monitoring Study**

From:

John V. Morris, Chemist

Region 5 Central Regional Laboratory

To:

Attached are the results for: **Cheshire Monitoring Study**

CRL data set number: **20020008**

Samples analyzed for: **Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel and Selenium**

Results are reported for sample designations: **2002AH14S01, 2002AH14D01, 2002AH14S02 and 2002AH14S03**

OCT 31 2001

Data Management Coordinator and Date Received

Date Transmitted: OCT 31 2001

Please have the U.S. EPA Project Manager/Officer complete the Customer Satisfaction Survey, attached, or call the CRL Sample Coordinator at 3-1226.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
ML-10C

_____/_____/_____
Received by and Date

Comments:

Rev. 7/23/01

Date: 24 October 2001

Analyst: John V. Morris

Sample Batch Number: ~~20020004~~ & 20020008

Facility Name: Cheshire Monitoring Study

Analyte: ICP Metals

Narrative for the Analysis of Metals in Air Filters in Batches 20020004 & 20020008

On 11 October 2001, four air filters were received at CRL for analysis for metals. These samples were collected on 4 October 2001. On 19 October 2001, four more air filters were received at CRL for analysis for metals. These samples were collected on 10 October 2001. The sample descriptions are:

Batch ID	Sample ID	Serial No.	Station ID
20020004	2002AH13S01	G1006655	GUIDING HANDS SCHOOL
	2002AH13D01	G1006687	GUIDING HANDS SCHOOL
	2002AH13S02	G1006689	RVHS
	2002AH13S03	G1006691	ADDAVILLE
20020008	2002AH14S01	G1006684	GUIDING HANDS SCHOOL
	2002AH14D01	G1006682	GUIDING HANDS SCHOOL
	2002AH14S02	G1006679	RVHS
	2002AH14S03	G1006678	ADDAVILLE

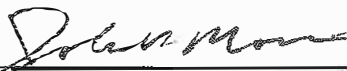
The analysis was limited to the thirteen metals listed on page 15 of the QAPP.

The samples were prepared on 22 October 2001. Method Metals_006, a hot block adaptation of the beaker digestion given in 40 CFR Part 50, Appendix G, was used for the digestion. The digestion log number was 1323. There are no holding times for the air program.

Three filter blanks were prepared, but were taken from a different box than the field samples because all of the one box had been shipped to the field. The serial numbers used in these batches do not correspond to any box of filters this analyst can find at CRL. Because we do not have blanks from this lot, the same blank subtraction criteria as for the first several batches were used. The previous blank data was used for blank subtraction, only applying blank subtraction to the elements barium, chromium, iron, magnesium and nickel. All other elements reported had filter blank results well below the detection limits of the respective analytes. For the five above named elements, the average filter blank from the measurements performed alongside earlier batches from this study and data collected on filter blanks prior to the begin of field collection, was subtracted from the measured results. This was done as described in section 11.2 of the CRL SOP Metals_006 to remove the contribution to the result from the glass fiber filter itself.

Date: 24 October 2001

Analyst: John V. Morris



Sample Batch Number: 20020004 & 20020008

Facility Name: Cheshire Monitoring Study

Analyte: ICP Metals

inserted into the run as part of the normal run, and the copper data is taken from these dilutions. The dilutions of 2002AH14S01 and its duplicate were also built into the .sif file, but were not needed.

No significant spectral interference errors are indicated in the SIC measurements for these samples

Again, as with previous batches, the co-located sample pair 2002AH13S01 and 2002AH13D01, as well as the co-located sample pair 2002AH14S01 and 2002AH14D01, results are quite different. Again it appeared that the exposed portion is much darker for the S01s than for the D01s, as is consistent with the analytical results.

All analytical results files, sample information files and reformat files for ICP analysis can be found on the R5CRL data server using the following path:

h:\r5crl\vol3\metals\jvmorris\20020004_8\3300dv\

The narrative, QC summary spreadsheets, sample result calculation spreadsheets and the final sample report for ICP analysis can be found on the R5CRL data server using the following path:

h:\r5crl\vol3\metals\jvmorris\20020004_8\reports\

US EPA CRL - Region V
ICP Final Report Results
Air Filters

Sample Number:	Filter Blank 1	Station ID:	None
Sample Batch Number:	20020004 & 8	Study:	Cheshire Monitoring Study
Collection Date:	None	Filter SN:	G6092979
Analysis Date:	23 Oct 01		

<u>Element</u>	<u>Concentration</u>	<u>Units</u>
Arsenic	9 U	µg/filter
Barium	149	µg/filter
Beryllium	0.6 U	µg/filter
Cadmium	0.6 U	µg/filter
Chromium	3.21	µg/filter
Cobalt	1.2 U	µg/filter
Copper	2.4 U	µg/filter
Iron	57.6	µg/filter
Lead	6 U	µg/filter
Magnesium	550	µg/filter
Manganese	1.2 U	µg/filter
Nickel	1.2 U	µg/filter
Selenium	18 U	µg/filter

Jan
24 Oct 01

US EPA CRL - Region V
ICP Final Report Results
Air Filters

Sample Number:	Filter Blank 2	Station ID:	None
Sample Batch Number:	20020004 & 8	Study:	Cheshire Monitoring Study
Collection Date:	None	Filter SN:	G6092978
Analysis Date:	23 Oct 01		

<u>Element</u>	<u>Concentration</u>	<u>Units</u>
Arsenic	9 U	µg/filter
Barium	145	µg/filter
Beryllium	0.6 U	µg/filter
Cadmium	0.6 U	µg/filter
Chromium	3.05	µg/filter
Cobalt	1.2 U	µg/filter
Copper	2.4 U	µg/filter
Iron	54.7	µg/filter
Lead	6 U	µg/filter
Magnesium	530	µg/filter
Manganese	1.2 U	µg/filter
Nickel	1.2 U	µg/filter
Selenium	18 U	µg/filter

Jun
24 Oct 01

US EPA CRL - Region V
ICP Final Report Results
Air Filters

Sample Number: Filter Blank 3 Station ID: None
Sample Batch Number: 20020004 & 8 Study: Cheshire Monitoring Study
Collection Date: None Filter SN: G6092977
Analysis Date: 23 Oct 01

<u>Element</u>	<u>Concentration</u>	<u>Units</u>
Arsenic	9 U	µg/filter
Barium	153	µg/filter
Beryllium	0.6 U	ug/filter
Cadmium	0.6 U	µg/filter
Chromium	4.32	µg/filter
Cobalt	1.2 U	µg/filter
Copper	2.4 U	µg/filter
Iron	63.0	µg/filter
Lead	6 U	µg/filter
Magnesium	555	µg/filter
Manganese	1.2 U	µg/filter
Nickel	1.2 U	µg/filter
Selenium	18 U	µg/filter

US EPA CRL - Region V
ICP Final Report Results
Air Filters

Sample Number:	2002AH14S01	Station ID:	GUIDING HANDS SCHOOL
Sample Batch Number:	20020008	Study:	Cheshire Monitoring Study
Collection Date:	10 Oct 01	Filter SN:	G1006684
Analysis Date:	23 Oct 01		

<u>Element</u>	<u>Concentration</u>	<u>Units</u>
Arsenic	9 U	µg/filter
Barium	95 U	µg/filter
Beryllium	0.6 U	µg/filter
Cadmium	0.6 U	µg/filter
Chromium	3.14 U	µg/filter
Cobalt	1.2 U	µg/filter
Copper	1030	µg/filter
Iron	1010	µg/filter
Lead	14.3 J	µg/filter
Magnesium	376	µg/filter
Manganese	31.4	µg/filter
Nickel	5.73 U	µg/filter
Selenium	18 U	µg/filter

µm
24 Oct 01

US EPA CRL - Region V
ICP Final Report Results
Air Filters

Sample Number:	2002AH14D01	Station ID:	GUIDING HANDS SCHOOL
Sample Batch Number:	20020008	Study:	Cheshire Monitoring Study
Collection Date:	10 Oct 01	Filter SN:	G1006682
Analysis Date:	23 Oct 01		

<u>Element</u>	<u>Concentration</u>	<u>Units</u>
Arsenic	9 U	µg/filter
Barium	95 U	µg/filter
Beryllium	0.6 U	µg/filter
Cadmium	0.6 U	µg/filter
Chromium	3.14 U	µg/filter
Cobalt	1.2 U	µg/filter
Copper	169	µg/filter
Iron	1040	µg/filter
Lead	7.14 U	µg/filter
Magnesium	366	µg/filter
Manganese	32.2	µg/filter
Nickel	5.73 U	µg/filter
Selenium	18 U	µg/filter

µm
24 Oct 01

US EPA CRL - Region V
ICP Final Report Results
Air Filters

Sample Number:	2002AH14S02	Station ID:	RVHS
Sample Batch Number:	20020008	Study:	Cheshire Monitoring Study
Collection Date:	10 Oct 01	Filter SN:	G1006679
Analysis Date:	23 Oct 01		

<u>Element</u>	<u>Concentration</u>	<u>Units</u>
Arsenic	9 U	µg/filter
Barium	99.0	µg/filter
Beryllium	0.6 U	µg/filter
Cadmium	0.738	µg/filter
Chromium	3.14 U	µg/filter
Cobalt	1.2 U	µg/filter
Copper	49.9	µg/filter
Iron	893	µg/filter
Lead	37.2	µg/filter
Magnesium	389	µg/filter
Manganese	22.7	µg/filter
Nickel	5.73 U	µg/filter
Selenium	18 U	µg/filter

Jun
24 Oct 01

US EPA CRL - Region V
ICP Final Report Results
Air Filters

Sample Number:	2002AH14S03	Station ID:	ADDAVILLE
Sample Batch Number:	20020008	Study:	Cheshire Monitoring Study
Collection Date:	10 Oct 01	Filter SN:	G1006678
Analysis Date:	23 Oct 01		

<u>Element</u>	<u>Concentration</u>	<u>Units</u>
Arsenic	9 U	µg/filter
Barium	95 U	µg/filter
Beryllium	0.6 U	µg/filter
Cadmium	0.6 U	µg/filter
Chromium	3.14 U	µg/filter
Cobalt	1.2 U	µg/filter
Copper	297	µg/filter
Iron	492	µg/filter
Lead	6 U,J	µg/filter
Magnesium	343 U	µg/filter
Manganese	19.9	µg/filter
Nickel	5.73 U	µg/filter
Selenium	18 U	µg/filter

*Jan
24 Oct 01*